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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,093	07/07/2003	Lars Erik Thon	AELU.P0006	8681

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EXAMINER
LAM, TUAN THIEU

ART UNIT	PAPER NUMBER
2816	

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/615,093

Applicant(s)

THON, LARS ERIK

Examiner

Tuan T. Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5-13, 15-19, 23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 11-13, 15-18, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 9, 10, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

This is a response to the amendment filed 12/12/2005. Claims 1-3, 5-13, 15-19 and 23-24 are pending and are under examination.

#### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5, 11-13, 15 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Minuhin (USP 5,854,717), prior art of record.

Figure 3 of Minuhin shows a circuit comprising at least one delay element (T1) for receiving an input signal (22), and for generating a time delay in said signal to produce a time delayed signal, calibration circuit (92, 78), coupled to said delay element, for calibrating said delay element so as to match said time delay to a predetermined time period, said calibration circuit comprising a control loop for receiving an output signal from said delay element and a reference signal (30, 166) and for generating a phase adjustment based on a phase difference between said output and reference signals, and multiplier-summing circuit (82-90, 100), for multiplying at least one signal output from said delay element to produce at least one multiplied signal and for summing at least one multiplied signal to generate an equalized signal as called for in claims 1-2, 11-12 and 23.

Regarding claims 3 and 13, figure 4 shows a phase detector (136A, 136B) and a loop filter 144.

Regarding claims 5 and 15, delay element comprises a transmission line (electrical wire).

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-8 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minuhin (USP 5,854,717) in view of Yu et al. (US 20030090339).

Figure 3 of Minuhin shows a circuit comprising at least one delay element (T1) for receiving an input signal (22), and for generating a time delay in said signal to produce a time delayed signal, calibration circuit (92, 78), coupled to said delay element, for calibrating said delay element so as to match said time delay to a predetermined time period, said calibration circuit comprising a control loop for receiving an output signal from said delay element and a reference signal (30, 166) and for generating a phase adjustment based on a phase difference between said output and reference signals, and multiplier-summing circuit (82-90, 100), for multiplying at least one signal output from said delay element to produce at least one multiplied signal and for summing at least one multiplied signal to generate an equalized signal

Minuhin reference does not show delay elements comprises means for selecting combinations of said lumped parameters to calibrate said delay element as called for in claims 7-8 and 17-18. Figure 3 of Yu et al. shows a delay line having a plurality of delay elements, each delay element is calibrated by a selecting means (switches) to provide an accurate delay time and less sensitive to temperature fluctuation. Therefore, it would have been obvious to a person

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skilled in the art at the time of the invention was made to replace each of Minuhin's delay element with a switch, an inductor and a capacitor for the purpose of providing an accurate delay time that is less sensitive to temperature fluctuation.

3. Claims 6, 16 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minuhin (USP 5,854,717) in view of Yu et al. (US 20030090339).

Figure 3 of Minuhin shows a circuit comprising at least one delay element (T1) for receiving an input signal (22), and for generating a time delay in said signal to produce a time delayed signal, calibration circuit (92, 78), coupled to said delay element, for calibrating said delay element so as to match said time delay to a predetermined time period, said calibration circuit comprising a control loop for receiving an output signal from said delay element and a reference signal (30, 166) and for generating a phase adjustment based on a phase difference between said output and reference signals, and multiplier-summing circuit (82-90, 100), for multiplying at least one signal output from said delay element to produce at least one multiplied signal and for summing at least one multiplied signal to generate an equalized signal

Minuhin reference does not show delay elements comprises transmission line and adjustable capacitance as called for in claims 6 and 16. Figure 3 of Yu et al. shows a delay line having a plurality of delay elements, each delay element having an transmission line (inductor L) and an adjustable capacitance means (switch S and capacitor C) such that the an accurate delay time is provided. Therefore, it would have been obvious to a person skilled in the art at the time of the invention was made to replace each of Minuhin's delay element with a switch, an inductor and a capacitor for the purpose of providing an accurate delay time that is less sensitive to temperature fluctuation.

***Response to Arguments***

4. Applicant's arguments filed 12/12/2005 have been fully considered but they are not persuasive.

Regarding the rejection of claims 6, 16 and 24, applicant argues that Yu's figure 3 shows a graph of the output spectrum from a typical fourth order modulator is not persuasive. Yu's figure 3 clearly shows a delay element (L, C) having a transmission line (L) and its capacitance C is adjustable by the switches S1. Therefore, the rejection is deemed proper.

***Allowable Subject Matter***

5. Claims 9-10 and 19-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T. Lam whose telephone number is 571-272-1744. The examiner can normally be reached on Monday to Friday (7:30 am to 6:00pm).

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

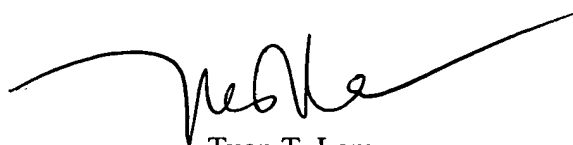
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIMOTHY P. CALLAHAN can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tuan T. Lam  
Primary Examiner  
Art Unit 2816

1/10/2006